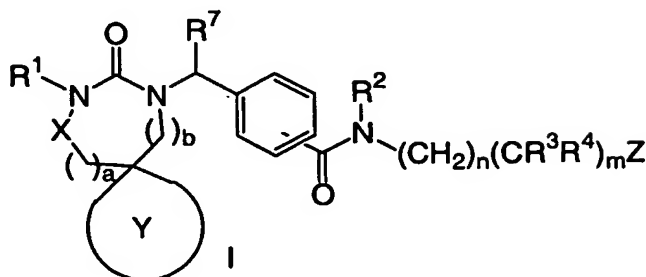


WHAT IS CLAIMED IS:

1. A compound represented by formula I:



or a pharmaceutically acceptable salt or solvate thereof, wherein:

- 5 a and b are independently selected from the integers 0 and 1, such that the sum of a and b is 0 or 1;

X is selected from CH₂ and C(O);

R¹ is selected from the group consisting of:

- (1) C₁₋₁₅ alkyl optionally substituted with up to five groups as follows: (a) 1-3 OH groups; (b) 1 oxo group; (c) 1-5 halo groups, up to a perhaloalkyl group; (d) 1-3 C₁₋₆ alkoxy groups optionally substituted with up to five halo or a perhaloalkoxy, or up to 2 hydroxy or CO₂R⁶ groups; (e) 1-2 CO₂R⁶ groups and (f) 1-2 phenyl groups, each optionally substituted as follows: 1-5 halo groups, (2) 1-2 OH, CO₂R⁶, CN or S(O)_pR⁵ groups, and (3) 1-2 C₁₋₆ alkyl or alkoxy groups, each optionally substituted with 1-5 halo, up to perhaloalkyl, and 1-2 OH or CO₂R⁶ groups; and

- (2) aryl or heteroaryl, optionally substituted as set forth below:

- (a) 1-3 hydroxy groups; (b) 1-5 halo groups; (c) 1-3 C₁₋₁₅ alkyl or alkoxy groups, each optionally substituted with up to five halo and 1-2 hydroxy or CO₂R⁶ groups; (d) 1-2 CO₂R⁶, CN, S(O)_pR⁵ or CONR⁹R¹⁰ groups; (e) NR⁹R¹⁰; (f) SCF₃; (g) phenyl, heteroaryl or O-phenyl, said group being optionally substituted with 1-5 halo groups, 1-2 OH, CO₂R⁶, CN or S(O)_nR⁵ groups, and 1-2 C₁₋₆ alkyl or alkoxy groups, each optionally substituted with 1-5 halo, up to perhaloalkyl, and 1-2 OH or CO₂R⁶ groups;

R² represents H or C₁₋₆alkyl;

R³ represents H or F;

- 25 R⁴ is selected from the group consisting of H, F and OH;

or R³ and R⁴ are taken in combination and represent an oxo group;

R⁵ represents a C₁₋₁₀alkyl group;

R⁶ represents H or C₁₋₁₀alkyl, optionally substituted with OH, OC₁₋₆alkyl, CO₂H, CO₂C₁₋₆alkyl, and 1-3 halo groups;

R^7 represents H, CO_2R^6 , C_{1-6} alkyl optionally substituted with OH, OC_{1-6} alkyl, CO_2R^6 or 1-3 halo groups;

R^8 and R^9 are independently selected from H and C_{1-6} alkyl;

R^{10} is H or is independently selected from:

- 5 (a) C_{1-10} alkyl, optionally substituted with OH, OC_{1-6} alkyl, CO_2H , CO_2C_{1-6} alkyl, and 1-3 halo groups; (b) aryl or C_{1-6} alkaryl, each optionally substituted with 1-5 halos and 1-3 members selected from the group consisting of: CN, OH, C_{1-10} alkyl and OC_{1-10} alkyl, said alkyl and alkoxy being further optionally substituted with 1-5 halo groups up to perhalo; (c) heterocycle, or C_{1-6} alkyl-heterocycle, optionally substituted with 1-5 halo groups and 1-3 groups
10 selected from: oxo, C_{1-10} alkyl and OC_{1-10} alkyl, said alkyl and alkoxy being further optionally substituted with 1-5 halo groups up to perhalo; and (d) heteroaryl or C_{1-6} alkyl-heteroaryl, optionally substituted with 1-5 halo groups and 1-3 groups selected from: C_{1-10} alkyl and OC_{1-10} alkyl, said alkyl and alkoxy being further optionally substituted with 1-5 halo groups up to perhalo;

15 R^{11} is independently selected from the group consisting of:

- (a) C_{1-10} alkyl, optionally substituted with OH, OC_{1-6} alkyl, CO_2H , CO_2C_{1-6} alkyl, and 1-3 halo groups; (b) aryl or C_{1-6} alkaryl, each optionally substituted with 1-5 halos and 1-3 members selected from the group consisting of: CN, OH, C_{1-10} alkyl and OC_{1-10} alkyl, said alkyl and alkoxy being further optionally substituted with 1-5 halo groups up to perhalo; (c)
20 heterocycle, or C_{1-6} alkyl-heterocycle, optionally substituted with 1-5 halo groups and 1-3 groups selected from: oxo, C_{1-10} alkyl and OC_{1-10} alkyl, said alkyl and alkoxy being further optionally substituted with 1-5 halo groups up to perhalo; and (d) heteroaryl or C_{1-6} alkyl-heteroaryl, optionally substituted with 1-5 halo groups and 1-3 groups selected from: C_{1-10} alkyl and OC_{1-10} alkyl, said alkyl and alkoxy being further optionally substituted with 1-5 halo groups up to
25 perhalo;

Y represents a 4 to 8 membered spirocarbocyclic ring or a spiroheterocyclic ring containing up to three heteroatoms, 0-1 of which are selected from O and S and 0-3 of which are N,

30 said spirocarbocyclic or spiroheterocyclic ring being optionally substituted on either carbon or nitrogen atoms with up to three groups independently selected as follows:

- (a) 1-2 phenyl groups, each being optionally substituted with one to five groups independently selected from the group consisting of: (1) 1-3 hydroxy groups; (2) 1-5 halo groups; (3) 1-3 C_{1-8} alkyl or alkoxy groups, each being further optionally substituted with 1-5 halo or 1-2 OH or CO_2R^6 groups, and (4) 1-2 CO_2R^6 , CN, $S(O)_pR^5$, $CONR^9R^{10}$ or NO_2 groups;

(b) C₁₋₁₀ alkyl optionally substituted with 1-5 groups selected as follows: (i) 1-3 hydroxy groups; (ii) 1 oxo group; (iii) 1-5 halo groups up to perhalo; (iv) 1-3 C₁₋₁₀ alkoxy groups, optionally substituted with 1-5 halo groups up to perhalo, or 1-2 hydroxy or CO₂R⁶ groups; (v) 1-2 CO₂R⁶ groups; (vi) phenyl, optionally substituted with one to five groups independently selected from the group consisting of: (a) 1-3 hydroxy groups; (b) 1-5 halo groups; (c) 1-3 C₁₋₆ alkyl or alkoxy groups, optionally substituted with 1-5 halo groups up to perhalo, or 1-2 hydroxy or CO₂R⁶ groups; (d) 1-2 CO₂R⁶, CN, S(O)_pR⁵, CONR⁹R¹⁰ or NO₂ groups; (e) 1-2 phenyl rings, each of which is optionally substituted as follows: 1-3 C₁₋₁₀ alkyl or alkoxy groups, each being further optionally substituted with 1-5 halo up to perhalo, or 1-2 hydroxy or CO₂R⁶ groups;

said spirocarbocyclic or spiroheterocyclic ring being further optionally substituted on a carbon atom with a member selected from the group consisting of:

(a) -NR⁸-C(O)-NR⁹R¹⁰; (b) -NR⁸-CO₂R¹¹; (c) -NR⁸-C(O)R¹¹; (d) -NR⁹R¹⁰; (e) -NR⁸SO₂R¹¹; (f) -SO₂-NR⁹R¹⁰; (g) -C(O)NR⁹R¹⁰ and (h) -OC(O)-NR⁹R¹⁰;

and when said ring contains a nitrogen atom, said ring being further optionally substituted on the nitrogen atom with a member selected from the group consisting of:

(a) -C(O)NR⁹R¹⁰; (b) -CO₂R¹¹; (c) C(O)R¹¹; and (d) -SO₂R¹¹;

m and p are independently selected from 0, 1 and 2, and n is an integer from 0 to 6,

when both m and n are zero, Z is selected from 5-tetrazolyl and 5-(2-oxo-1,3,4-oxadiazolyl) and when one of m and n is other than zero, Z is selected from the group consisting of: CO₂R⁶, with R⁶ as defined above, 5-tetrazolyl and 5-(2-oxo-1,3,4-oxadiazolyl).

2. A compound in accordance with claim 1 wherein:

R¹ is selected from the group consisting of:

(1) C₁₋₆ alkyl optionally substituted with 1-3 groups selected from: OH, halo, C₁₋₃ alkoxy, halo-C₁₋₃alkoxy and phenyl, said phenyl being optionally substituted with 1-3 halo groups, SO₂R⁵, and 1-2 C₁₋₃alkyl or alkoxy groups optionally substituted with 1-3 halo groups, and

(2) aryl optionally substituted with 1-3 halo groups; 1-2 C₁₋₃alkyl or alkoxy groups, each optionally substituted with 1-3 halo groups; -NR⁹R¹⁰ wherein R⁹ and R¹⁰ are H or methyl; SCF₃ and heteroaryl.

3. A compound in accordance with claim 2 wherein:

R¹ represents phenyl optionally substituted with 1-2 groups selected from Br, Cl; trifluoromethyl and trifluoromethoxy.

4. A compound in accordance with claim 1 wherein: X represents CH₂.

5. A compound in accordance with claim 1 wherein a and b represent 0 or a represents 1 and b represents 0.

6. A compound in accordance with claim 1 wherein:

Y represents a spiroC₄₋₈cycloalkyl group or a 5-6 membered spiroheterocyclic group containing 1 N atom,

said ring being optionally substituted with a C₁₋₆ alkyl group, which is optionally substituted with 1-3 halo groups or 1 Phenyl ring that is optionally substituted with 1-2 halo, 1-2 C₁₋₃ alkyl or alkoxy groups, said alkyl and alkoxy substituents being further optionally substituted with 1-3 halo groups.

7. A compound in accordance with claim 6 wherein:

Y represents a spirocyclohexyl or spiropiperidinyl group that is substituted with a C₁₋₄ alkyl group that is optionally substituted with a phenyl ring.

8. A compound in accordance with claim 7 wherein:

Y represents a spirocyclohexyl group substituted with a t-butyl group at the 4 position.

9. A compound in accordance with claim 1 wherein: R² is H or C₁₋₃alkyl.

10. A compound in accordance with claim 9 wherein: R² represents H.

11. A compound in accordance with claim 1 wherein: R⁷ represents H or methyl.

12. A compound in accordance with claim 11 wherein R⁷ represents H.

13. A compound in accordance with claim 1 wherein:

n and m represent 0, and Z represents a 5-tetrazolyl group.

14. A compound in accordance with claim 1 wherein:
m represents 0, n represents 2, and Z represents a CO_2R^6 group.

15. A compound in accordance with claim 1 wherein:
5 m and n each represent 1, R^3 represents OH, R^4 represents H and Z represents a CO_2R^6 group.

16. A compound in accordance with claim 1 wherein:
 R^1 is selected from the group consisting of:

(1) C_{1-6} alkyl optionally substituted with 1-3 groups selected from: OH, halo, C_{1-3}
10 alkoxy, halo- C_{1-3} alkoxy and phenyl, said phenyl being optionally substituted with 1-3 halo
groups, SO_2R^5 , and 1-2 C_{1-3} alkyl or alkoxy groups optionally substituted with 1-3 halo groups,
and

(2) aryl optionally substituted with 1-3 halo groups; 1-2 C_{1-3} alkyl or alkoxy groups,
each optionally substituted with 1-3 halo groups; $-\text{NR}^9\text{R}^{10}$ wherein R^9 and R^{10} are H or methyl;
15 SCF_3 and heteroaryl; .

X represents CH_2 ;

a and b represent 0 or a represents 1 and b represents 0;

Y represents a spiro C_{4-8} cycloalkyl group or a 5-6 membered spiroheterocyclic
group containing 1 N atom,

20 said ring being optionally substituted with a C_{1-6} alkyl group, which is optionally
substituted with 1-3 halo groups or 1 Phenyl ring that is optionally substituted with 1-2 halo, 1-2
 C_{1-3} alkyl or alkoxy groups, said alkyl and alkoxy substituents being further optionally substituted
with 1-3 halo groups;

R^2 is H or C_{1-3} alkyl;

25 R^7 represents H or methyl;

m and n represent 0, and Z represents a 5-tetrazolyl group.

17. A compound in accordance with claim 1 wherein:

R^1 is selected from the group consisting of:

30 (1) C_{1-6} alkyl optionally substituted with 1-3 groups selected from: OH, halo, C_{1-3}
alkoxy, halo- C_{1-3} alkoxy and phenyl, said phenyl being optionally substituted with 1-3 halo
groups, SO_2R^5 , and 1-2 C_{1-3} alkyl or alkoxy groups optionally substituted with 1-3 halo groups,
and

(2) aryl optionally substituted with 1-3 halo groups; 1-2 C₁₋₃alkyl or alkoxy groups, each optionally substituted with 1-3 halo groups; -NR⁹R¹⁰ wherein R⁹ and R¹⁰ are H or methyl; SCF₃ and heteroaryl;

X represents CH₂;

5 a and b represent 0 or a represents 1 and b represents 0;

Y represents a spiroC₄₋₈cycloalkyl group or a 5-6 membered spiroheterocyclic group containing 1 N atom,

said ring being optionally substituted with a C₁₋₆ alkyl group, which is optionally substituted with 1-3 halo groups or 1 Phenyl ring that is optionally substituted with 1-2 halo, 1-2 C₁₋₃ alkyl or alkoxy groups, said alkyl and alkoxy substituents being further optionally substituted with 1-3 halo groups;

R² is H or C₁₋₃alkyl;

R⁷ represents H or methyl;

m represents 0, n represents 2, and Z represents a CO₂R⁶ group.

15

18. A compound in accordance with claim 1 wherein:

R¹ is selected from the group consisting of:

(1) C₁₋₆ alkyl optionally substituted with 1-3 groups selected from: OH, halo, C₁₋₃ alkoxy, halo-C₁₋₃alkoxy and phenyl, said phenyl being optionally substituted with 1-3 halo groups, SO₂R⁵, and 1-2 C₁₋₃alkyl or alkoxy groups optionally substituted with 1-3 halo groups, and

(2) aryl optionally substituted with 1-3 halo groups; 1-2 C₁₋₃alkyl or alkoxy groups, each optionally substituted with 1-3 halo groups; -NR⁹R¹⁰ wherein R⁹ and R¹⁰ are H or methyl; SCF₃ and heteroaryl; .

25 X represents CH₂;

a and b represent 0 or a represents 1 and b represents 0;

Y represents a spiroC₄₋₈cycloalkyl group or a 5-6 membered spiroheterocyclic group containing 1 N atom,

said ring being optionally substituted with a C₁₋₆ alkyl group, which is optionally substituted with 1-3 halo groups or 1 Phenyl ring that is optionally substituted with 1-2 halo, 1-2 C₁₋₃ alkyl or alkoxy groups, said alkyl and alkoxy substituents being further optionally substituted with 1-3 halo groups;

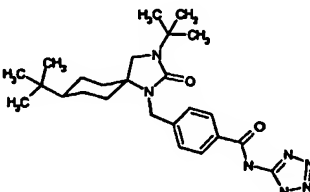
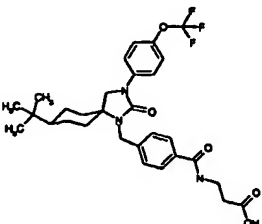
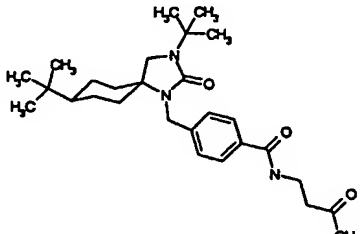
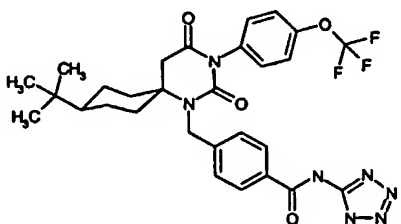
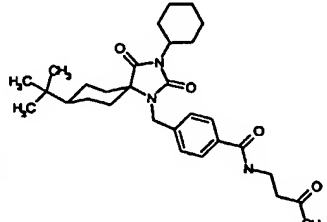
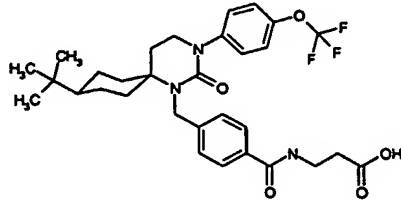
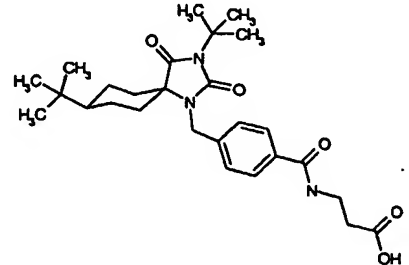
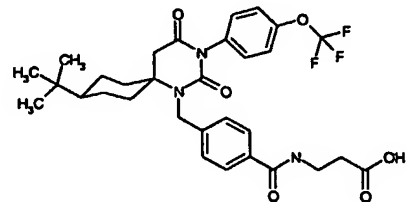
30 R² is H or C₁₋₃alkyl;

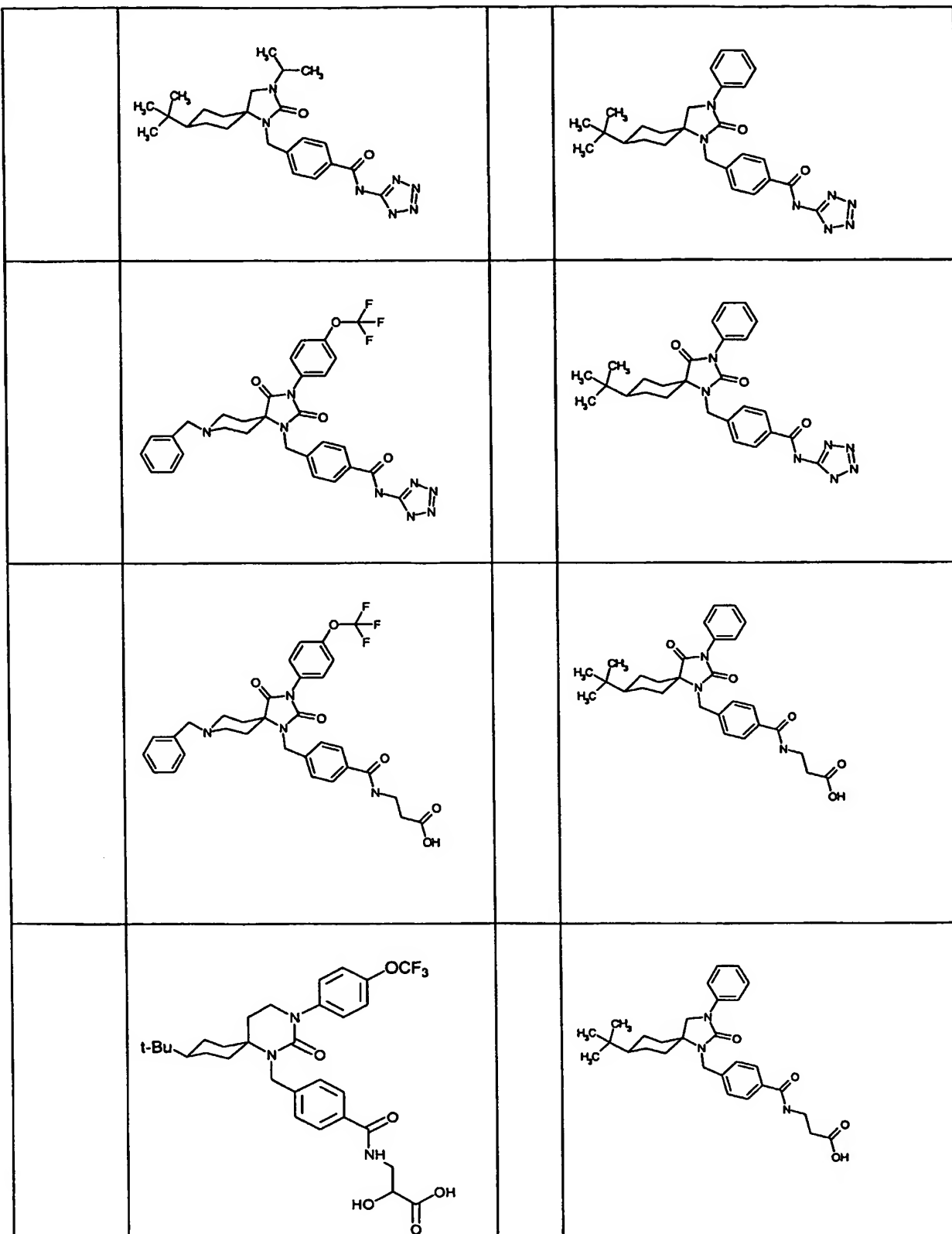
R⁷ represents H or methyl;

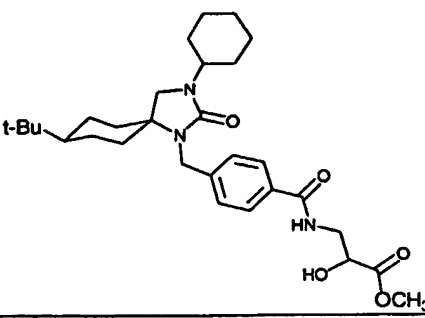
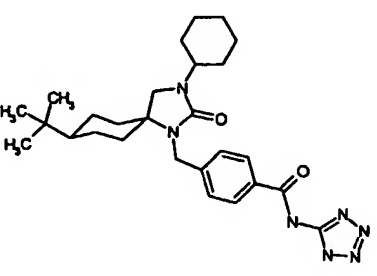
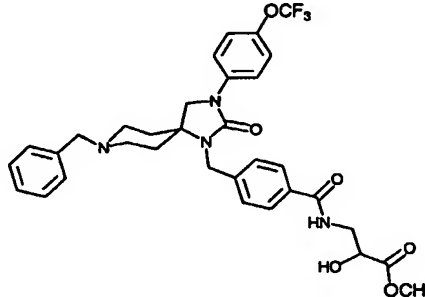
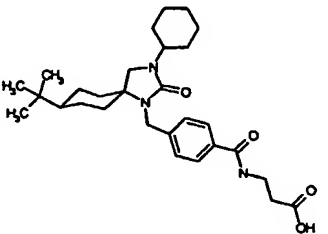
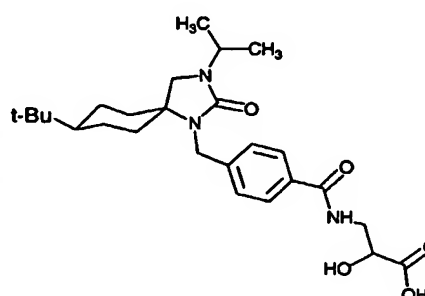
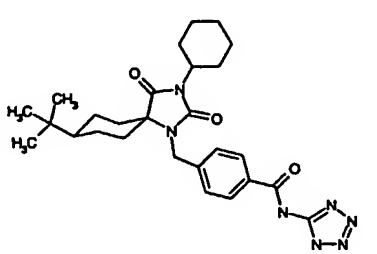
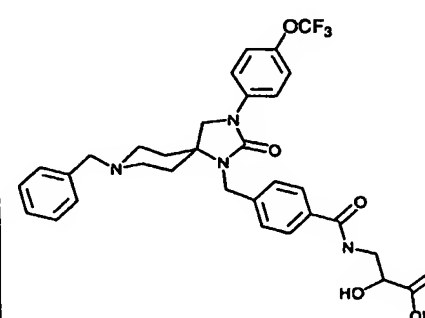
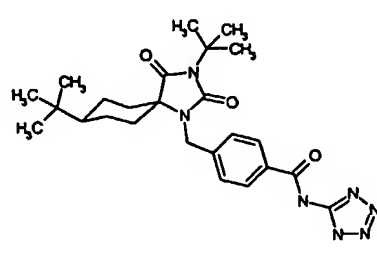
m and n each represent 1, R³ represents OH, R⁴ represents H and Z represents a CO₂R⁶ group.

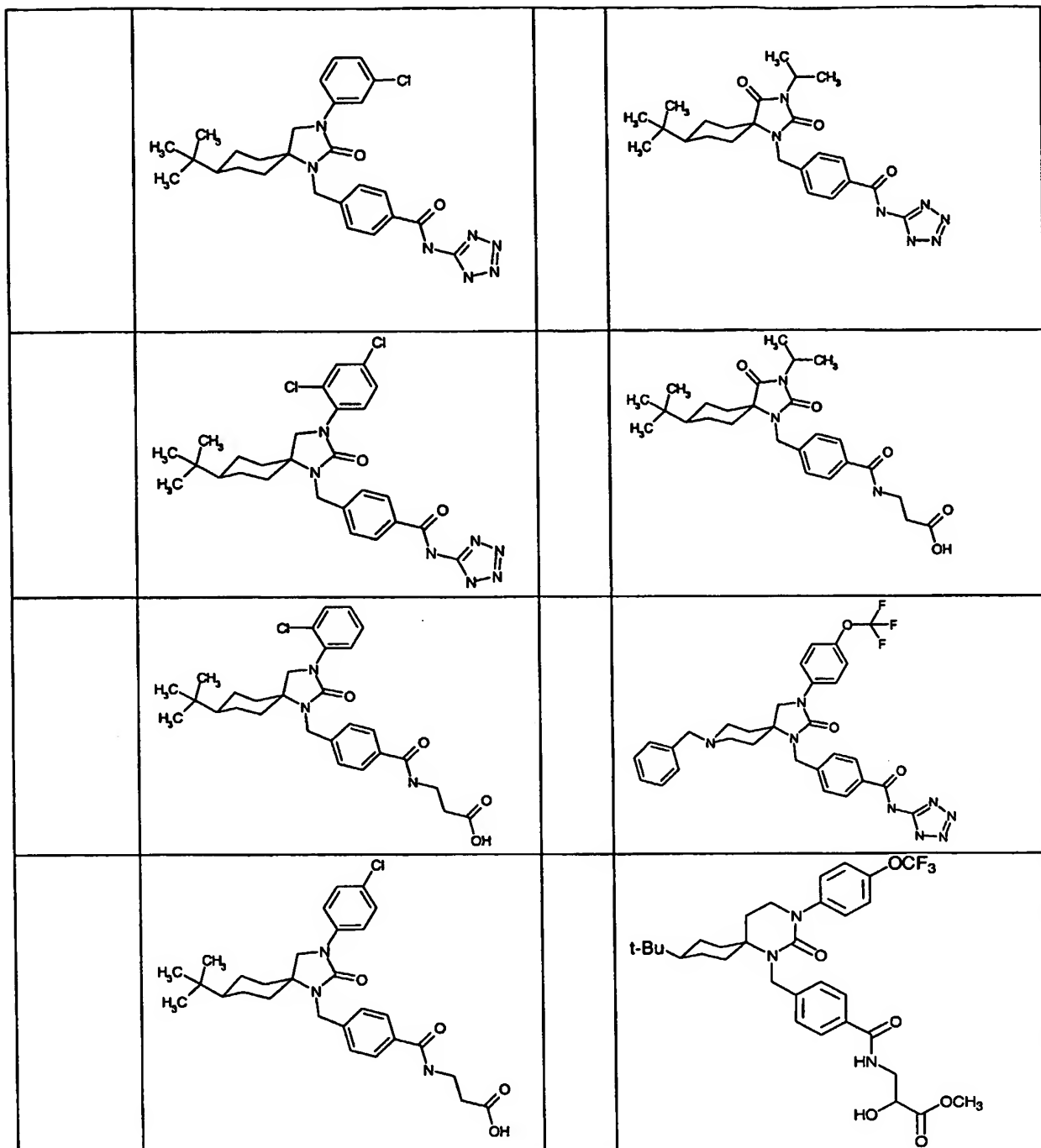
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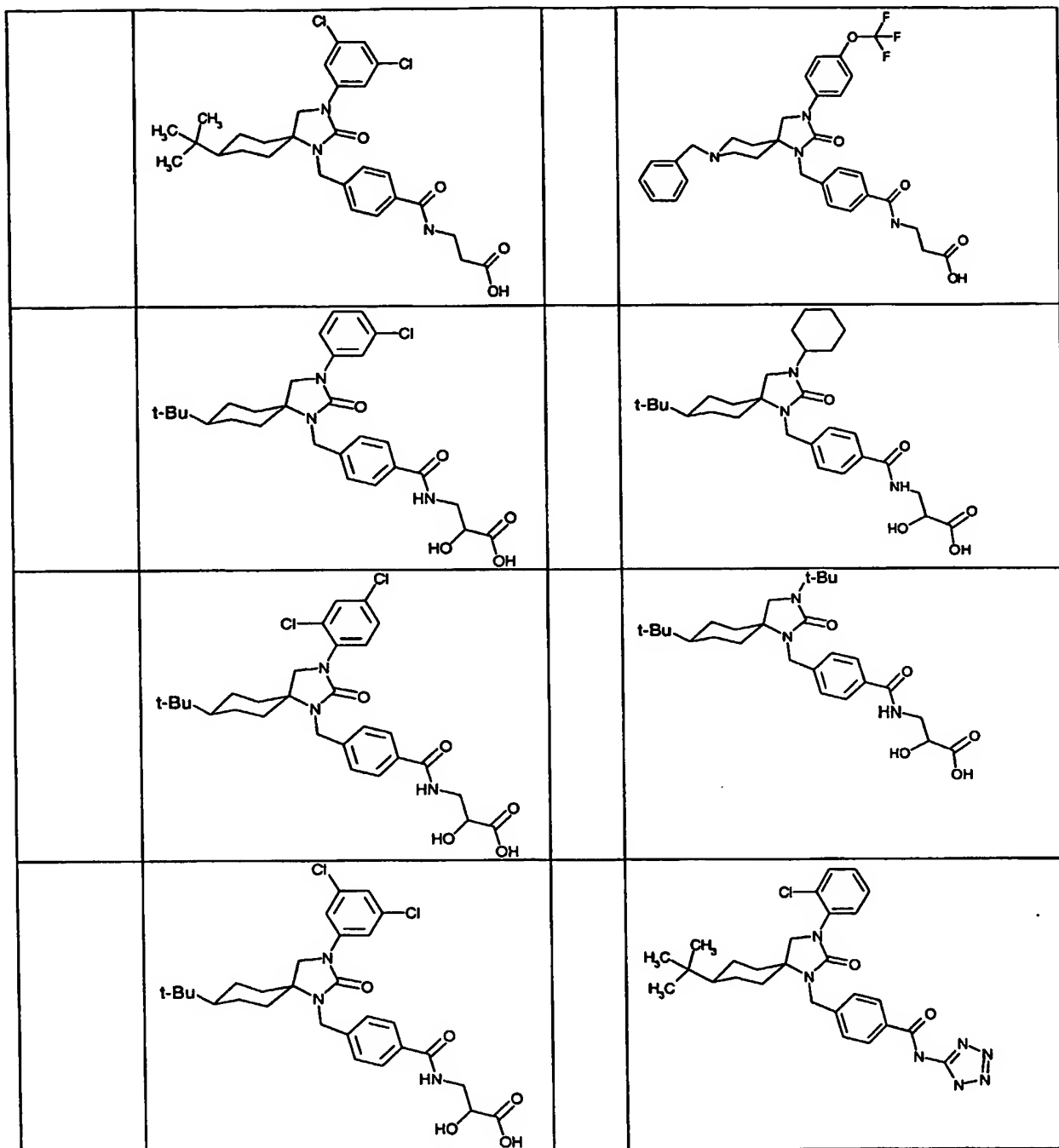
TABLE 1			
	Compound		Compound

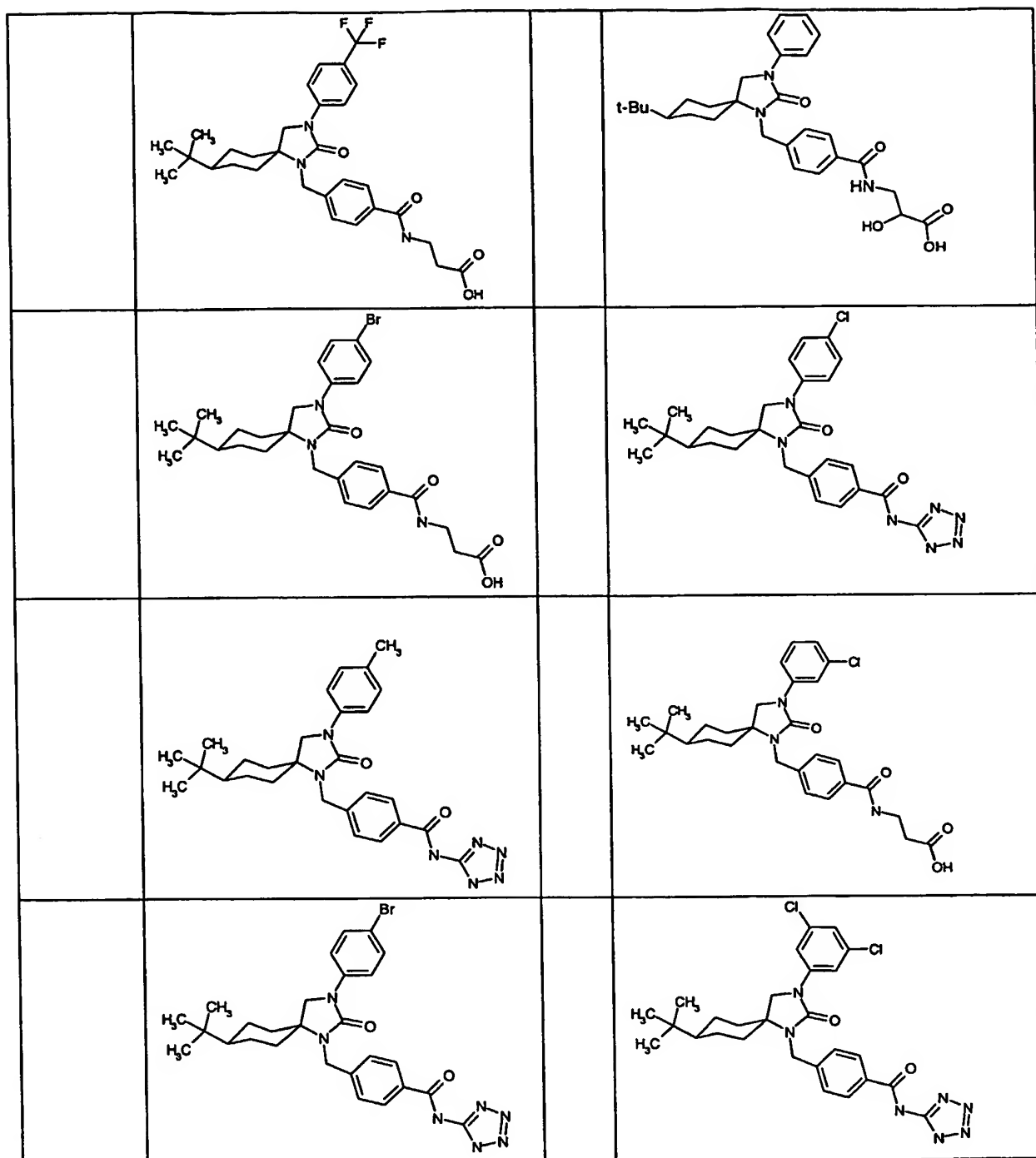
			
			
			
			

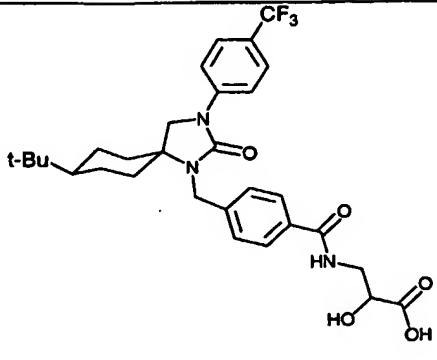
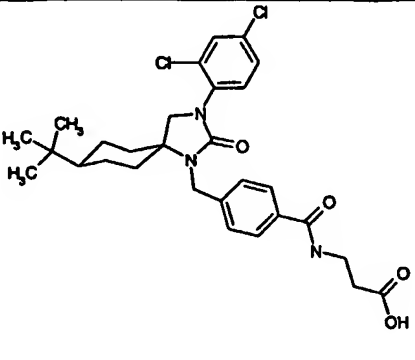
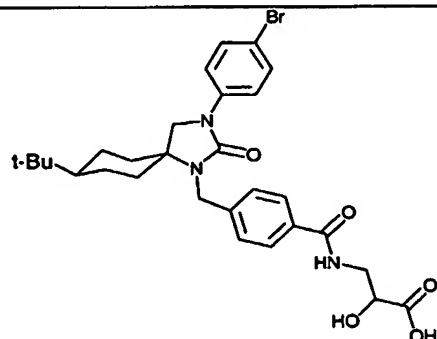
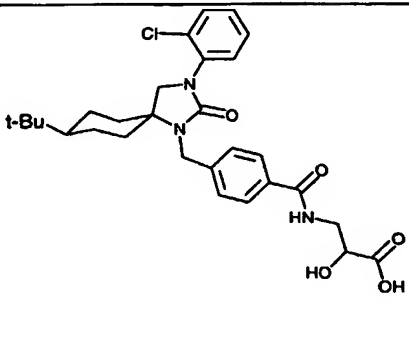
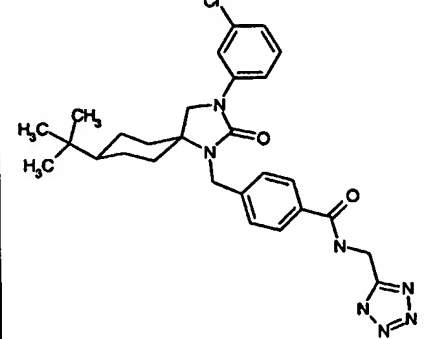
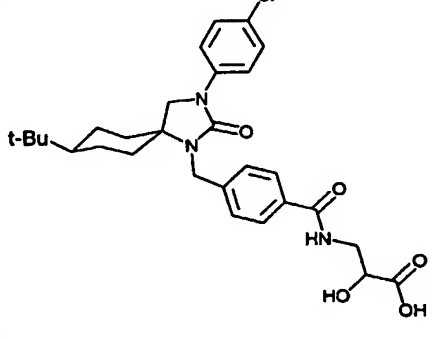
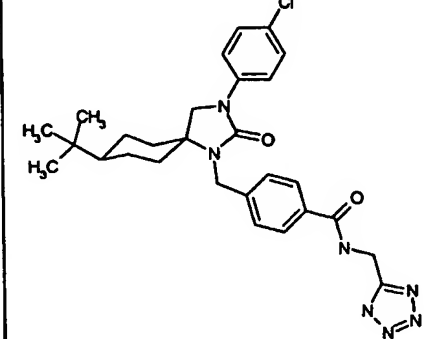
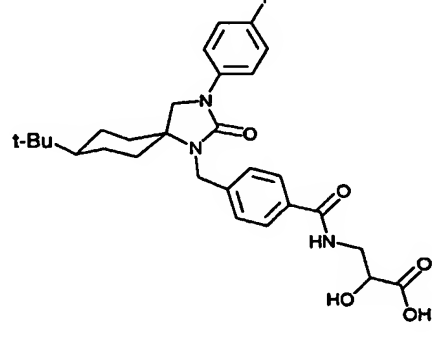


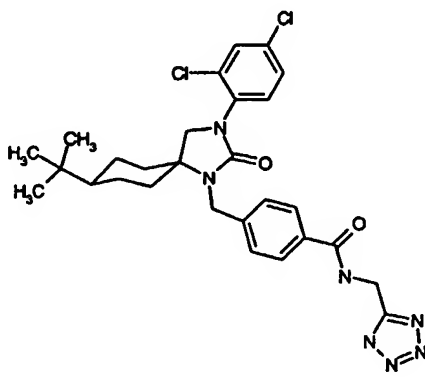
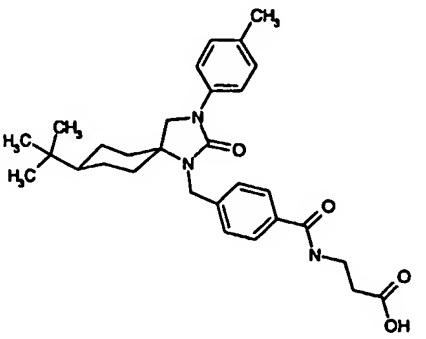
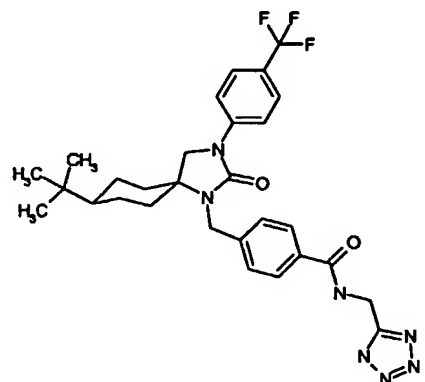
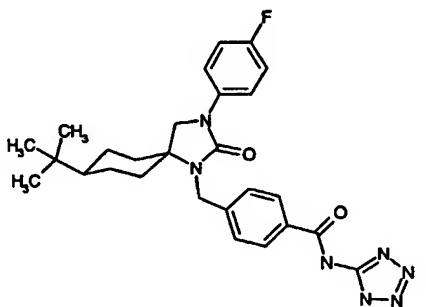
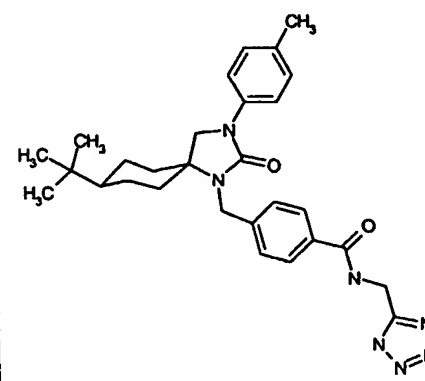
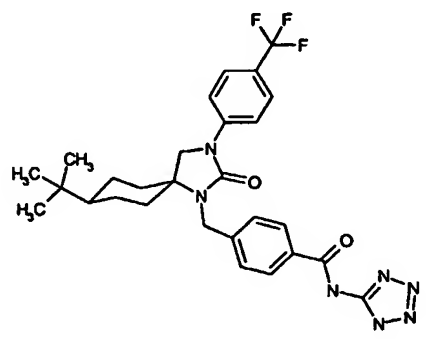
			
			
			
			

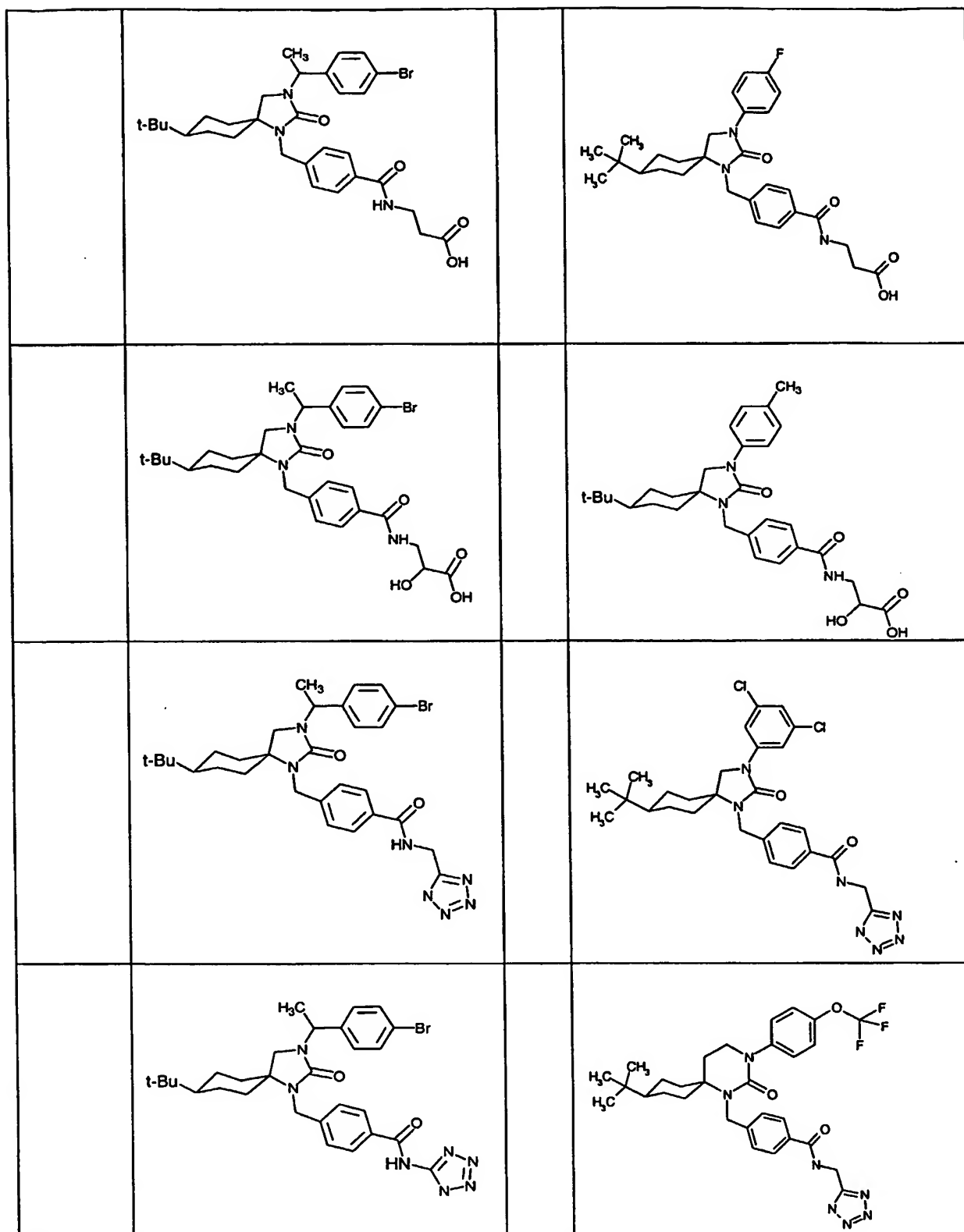


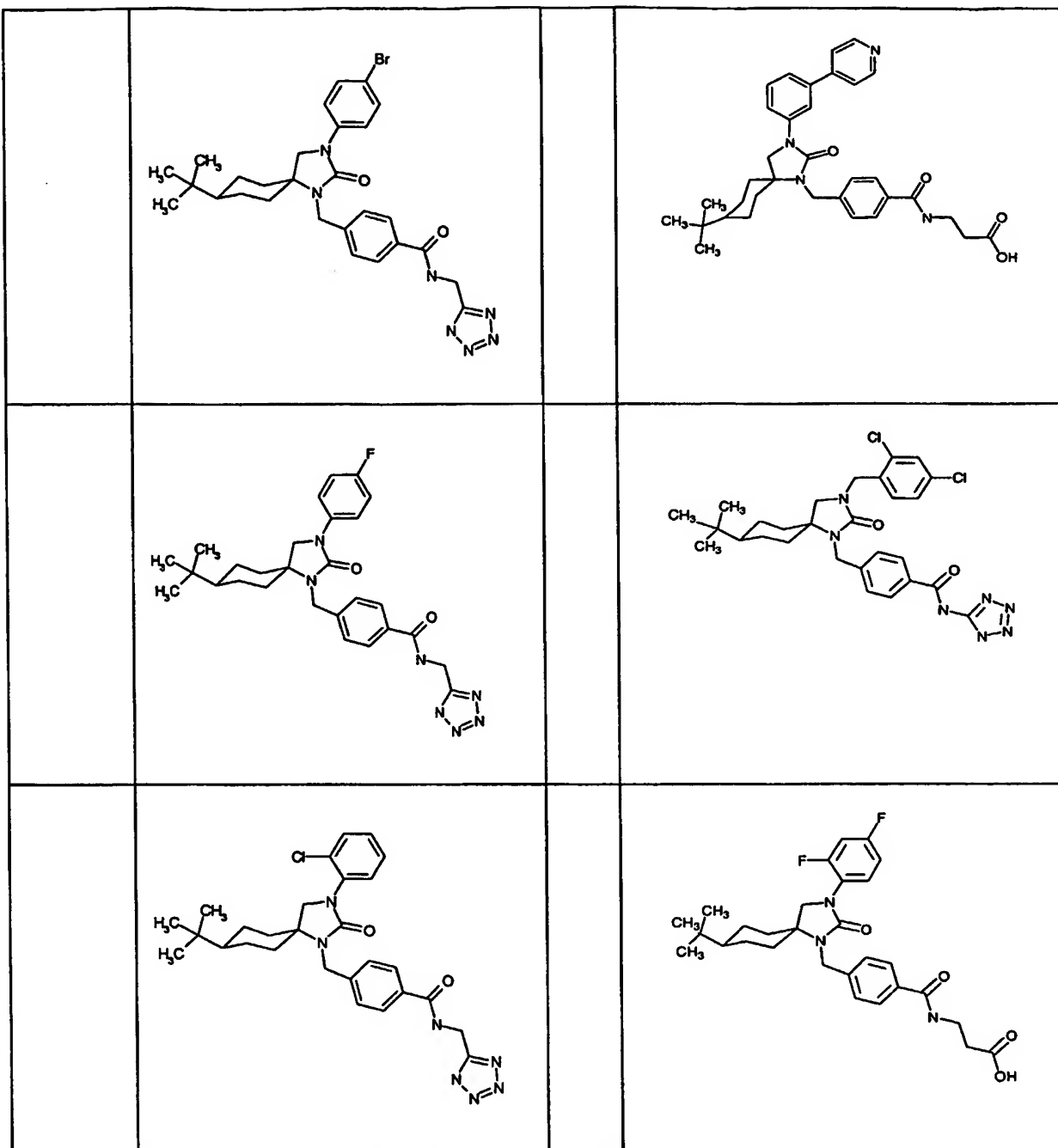


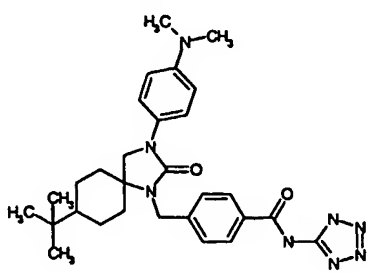
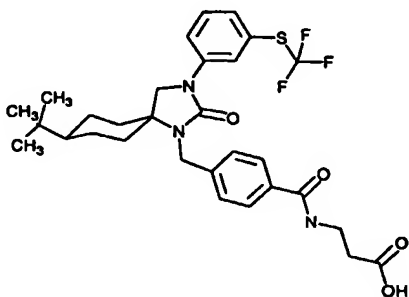
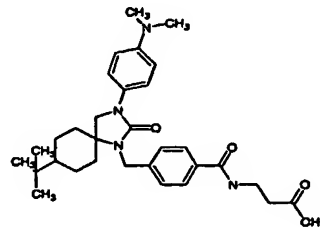
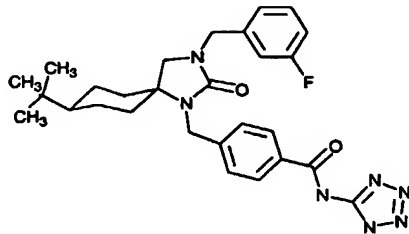
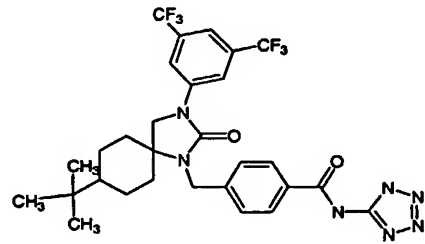
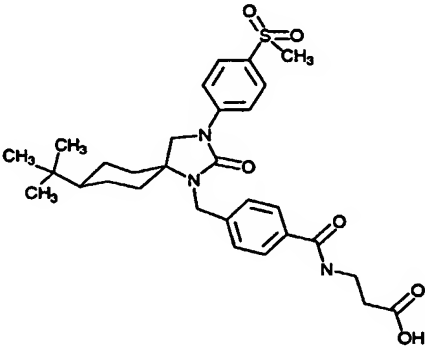
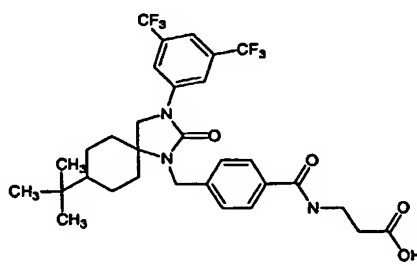
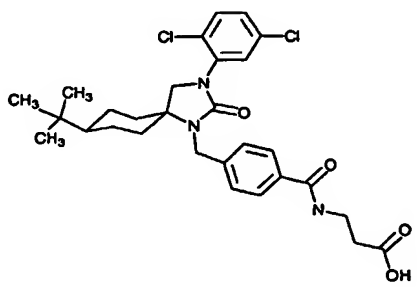


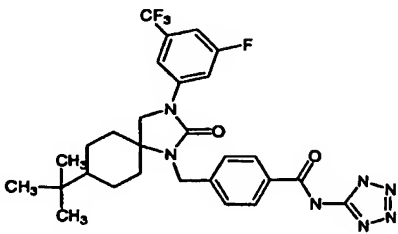
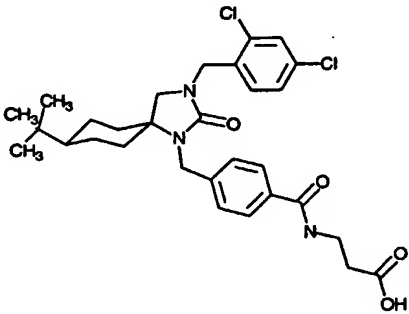
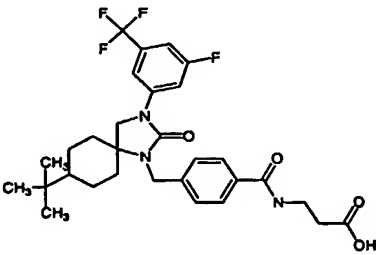
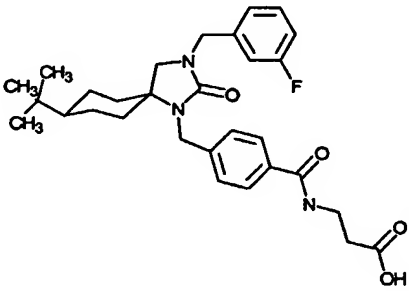
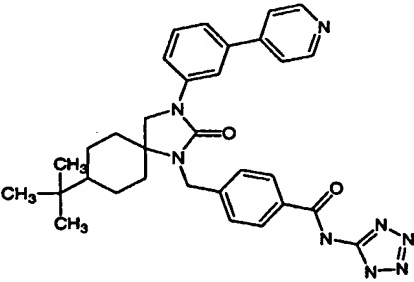
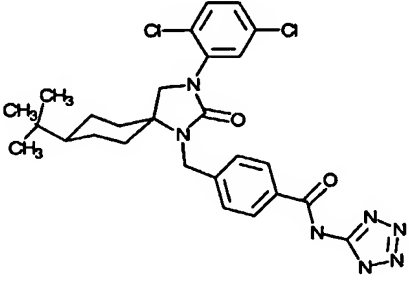
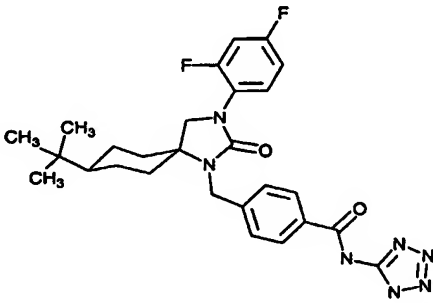
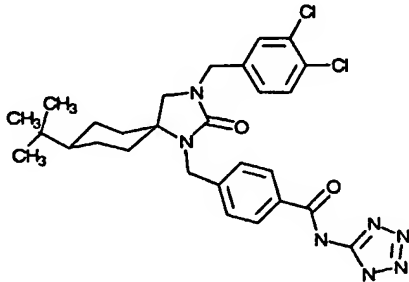
	 <chem>CC(C)(C)C1CCC2C(C1)N(C(=O)NCC(=O)O)C(=O)N(C2)c3ccc(C(F)(F)F)cc3</chem>		 <chem>CC(C)(C)C1CCC2C(C1)N(C(=O)NCC(=O)O)C(=O)N(C2)c3cc(Cl)cc(Cl)c3</chem>
	 <chem>CC(C)(C)C1CCC2C(C1)N(C(=O)NCC(=O)O)C(=O)N(C2)c3ccc(Br)cc3</chem>		 <chem>CC(C)(C)C1CCC2C(C1)N(C(=O)NCC(=O)O)C(=O)N(C2)c3cc(Cl)ccc3</chem>
	 <chem>CC(C)(C)C1CCC2C(C1)N(C(=O)NCC1=NN=NN1)C(=O)N(C2)c3ccc(Cl)cc3</chem>		 <chem>CC(C)(C)C1CCC2C(C1)N(C(=O)NCC(=O)O)C(=O)N(C2)c3ccc(Cl)cc3</chem>
	 <chem>CC(C)(C)C1CCC2C(C1)N(C(=O)NCC1=NN=NN1)C(=O)N(C2)c3ccc(Cl)cc3</chem>		 <chem>CC(C)(C)C1CCC2C(C1)N(C(=O)NCC(=O)O)C(=O)N(C2)c3ccc(F)cc3</chem>

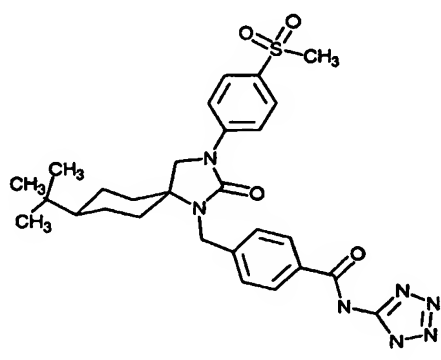
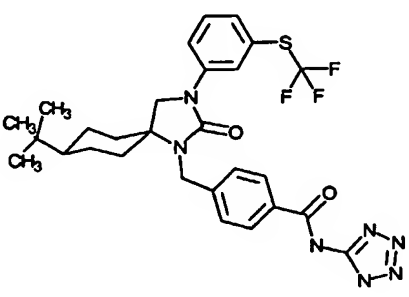
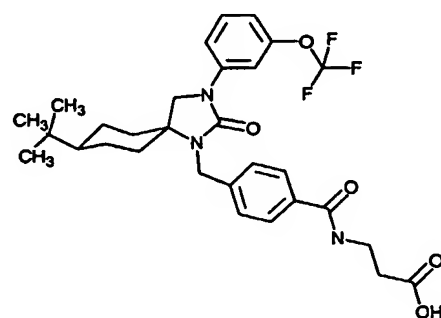
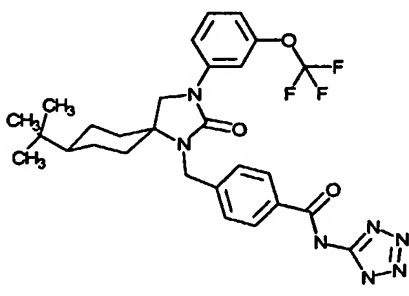
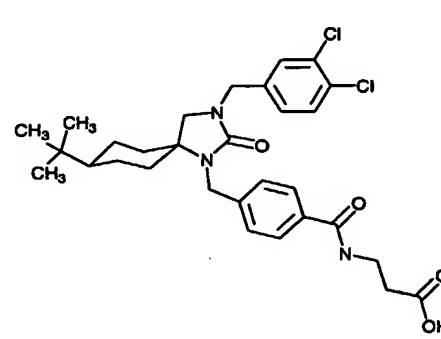
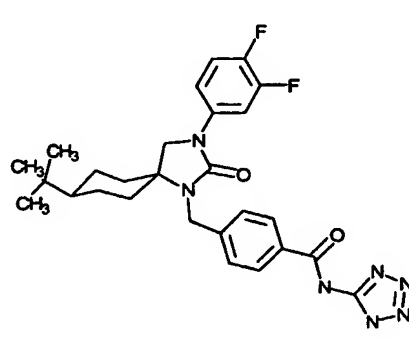
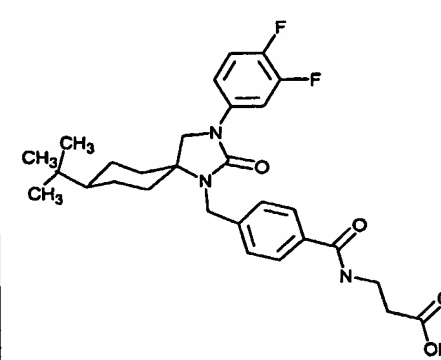
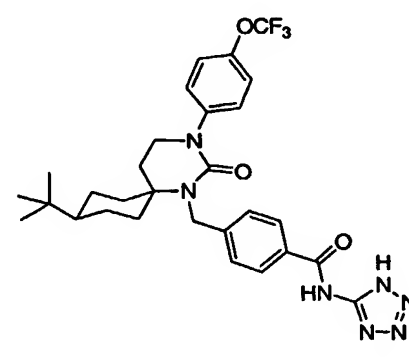
			
			
			

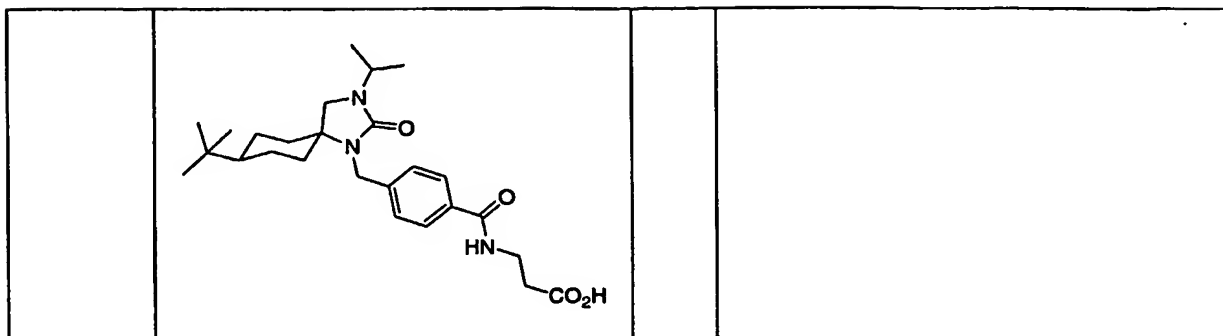




	 <chem>CC1(C)CCC2(C)CCN(C2)C(=O)N1Cc1ccc(cc1)C(=O)Nc1nn[nH]1S(=O)(=O)C</chem>		 <chem>CC1(C)CCC2(C)CCN(C2)C(=O)N1Cc1ccc(cc1)C(=O)Nc1nn[nH]1Sc2ccc(cc2)C(F)(F)F</chem>
	 <chem>CC1(C)CCC2(C)CCN(C2)C(=O)N1Cc1ccc(cc1)C(=O)NCC(=O)Oc2ccc(cc2)C(F)(F)F</chem>		 <chem>CC1(C)CCC2(C)CCN(C2)C(=O)N1Cc1ccc(cc1)C(=O)Nc1nn[nH]1Oc2ccc(cc2)C(F)(F)F</chem>
	 <chem>CC1(C)CCC2(C)CCN(C2)C(=O)N1Cc1ccc(cc1)C(=O)NCC(=O)Oc2cc(Cl)cc(Cl)c2</chem>		 <chem>CC1(C)CCC2(C)CCN(C2)C(=O)N1Cc1ccc(cc1)C(=O)Nc1nn[nH]1Oc2cc(F)cc(F)c2</chem>
	 <chem>CC1(C)CCC2(C)CCN(C2)C(=O)N1Cc1ccc(cc1)C(=O)NCC(=O)Oc2cc(F)cc(F)c2</chem>		 <chem>CC1(C)CCC2(C)CCN(C2)C(=O)N1Cc1ccc(cc1)C(=O)Nc1nn[nH]1Oc2ccc(cc2)OC(F)(F)F</chem>



or a pharmaceutically acceptable salt or solvate thereof

20. A pharmaceutical composition comprising a compound in accordance with
5 claim 1 in combination with a pharmaceutically acceptable carrier.

21. A method of treating type 2 diabetes mellitus in a mammalian patient in
need of such treatment comprising administering to said patient a compound in accordance with
claim 1 in an amount that is effective to treat said type 2 diabetes mellitus.

10